

Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application.

1. (Original) An injection molding apparatus comprising:

a first sprue bar element having a first sprue channel for receiving a melt stream of moldable material under pressure;

a second sprue bar element having a second sprue channel for selectively receiving said melt stream from said first sprue channel;

a manifold having a manifold channel for receiving said melt stream from said second sprue channel and delivering the melt stream to a nozzle channel of a nozzle;

a mold cavity receiving said melt stream from said nozzle, said nozzle channel communicating with said mold cavity through a mold gate;

a first gate assembly coupled to an outlet of said first sprue bar element for selectively restricting the flow of said melt stream from said first sprue channel;

a second gate assembly coupled to an inlet of said second sprue bar element for selectively restricting the flow of said melt stream from said second sprue channel; and

wherein said first gate assembly and said second gate assembly are movable to restrict the flow of melt from said first sprue channel and said second sprue channel when the flow of said melt stream between said first sprue channel and said second sprue channel is interrupted.

2. (Original) The injection molding apparatus of claim 1, wherein said first gate assembly is located outside of said first sprue channel and said second gate assembly is located outside of said second sprue channel.

3. (Currently Amended) The injection molding apparatus of claim 1, wherein said first sprue bar element and said second sprue bar element are axially movable relative to one another between a first position, in which said outlet of said first sprue bar element is in communication with the inlet of said second sprue bar element and said first gate assembly and said second gate assembly are in an open position to allow flow between said first sprue channel and said second sprue channel, and a second position, in which said first sprue bar element and said second sprue bar element are axially separated from one another and said first gate assembly and said second gate assembly are in a closed position to restrict the flow of melt from said first sprue channel and said second sprue channel.
4. (Currently Amended) The injection molding apparatus of claim 1[[3]], wherein said first sprue bar element delivers said melt stream to said second sprue bar element through a shear gate.
5. (Currently Amended) The injection molding apparatus of claim 1[[4]], wherein said first gate assembly is biased to restrict flow from said outlet and said second gate assembly is biased to restrict flow from said inlet.
6. (Currently Amended) The injection molding apparatus of claim 1[[5]], wherein said first gate assembly and said second gate assembly are movable in response to relative movement between said first sprue bar element and said second sprue bar element.
7. (Currently Amended) The injection molding machine of claim 1[[6]], wherein said first gate assembly and said second gate assembly are movable between said open position and said closed position, simultaneously.
8. (Original) The injection molding apparatus of claim 4, wherein said first sprue

channel and said second sprue channel share a common axis, said shear gate being aligned with said common axis.

9. (Currently Amended) The injection molding apparatus of claim 1[[8]], further comprising a shoulder projecting from said first sprue bar element ~~channel~~ adjacent said outlet, said first gate assembly being mounted on said shoulder.

10. (Original) The injection molding apparatus of claim 9, wherein said first gate assembly includes a cover plate that is mounted on a post, said post being mounted in a recess formed in said shoulder, said post interacting with a biasing device located in said recess for moving said first gate assembly from said open position to said closed position.

11. (Currently Amended) The injection molding apparatus of claim 1[[10]], wherein said first gate assembly includes a cover plate that is axially movable towards said open position in response to an axial force applied by an end surface of said second sprue bar element.

12. (Currently Amended) The injection molding apparatus of claim 11, wherein said second gate assembly includes a cover plate that is ~~is generally identical to said first gate assembly, said second gate assembly being~~ axially movable towards said open position in response to an axial force applied by an end surface of said first sprue bar element.

13. (Currently Amended) A sprue bar gate assembly ~~for a stack mold~~, said gate assembly comprising:

a first gate assembly coupled to an outlet of a first sprue bar element and having a
movable cover means; and

a second gate assembly coupled to an inlet of a second sprue bar element and
having a movable cover means,[[; and]]

wherein the inlet of said second sprue bar element receives a melt stream of
moldable material from the outlet of said first sprue bar element when said first gate
assembly movable cover means and said second gate assembly movable cover means are
moved to[[in]] an open position such that [[and]] said inlet and said outlet are aligned.

14. (Original) A stack injection molding apparatus comprising:

a stationary platen;

a first movable platen coupled to said stationary platen and movable into and out
of engagement with said stationary platen;

a second movable platen coupled to said stationary platen and movable into and
out of engagement with said first movable platen;

a first sprue bar element having a first sprue channel for receiving a melt stream
of moldable material under pressure, said first sprue bar for coupling to a machine
nozzle;

a second sprue bar element having a second sprue channel for selectively
receiving said melt stream from said first sprue channel;

a manifold coupled to said first movable platen, said manifold having a manifold
channel for receiving said melt stream from said second sprue channel and delivering
said melt stream to a first nozzle channel of a first nozzle and to a second nozzle channel
of a second nozzle;

a first mold cavity provided between said stationary platen and said first movable platen, said first mold cavity receiving said melt stream from said first nozzle channel through a first mold gate;

a second mold cavity provided between said first movable platen and said second movable platen, said second mold cavity receiving said melt stream from said second nozzle channel through a second mold gate;

a first gate assembly coupled to an outlet of said first sprue bar element for selectively restricting the flow of said melt from said outlet; and

wherein said first gate assembly is movable to restrict the flow of said melt stream from said outlet when the flow of said melt stream between said first sprue channel and said second sprue channel is interrupted.

15. (Currently Amended) An injection molding apparatus comprising:

a sprue bar having a channel extending therethrough, said channel having an inlet for receiving a melt stream of moldable material;

a manifold having a manifold channel for receiving said melt stream from an outlet of said sprue channel and delivering the melt stream to a nozzle channel of a nozzle;

a mold cavity for receiving said melt stream from said nozzle, said nozzle channel communicating with said mold cavity through a mold gate;

a melt transfer device located along a [[the]] length of said sprue bar, said melt transfer device for selectively providing a melt transfer path for said melt stream to flow between a first portion of said sprue bar and a second portion of said sprue bar, said melt transfer device being movable to interrupt said melt transfer path; and

a gate assembly coupled to said melt transfer device, said gate assembly being movable by movement of said melt transfer device to restrict the flow of melt from at least a first channel of said first ~~sprue bar~~ portion of said sprue bar when said melt transfer path is interrupted.

16. (Cancelled)

17. (Currently Amended) An injection molding apparatus comprising:

a first sprue bar element having a first sprue channel for receiving a melt stream of moldable material under pressure;

a second movable sprue bar element having a second sprue channel for selectively receiving said melt stream from said first sprue channel, said second sprue element having a first position and a second position relative to the first sprue bar element;

a first gate assembly located outside said first sprue channel and coupled to an outlet of said first sprue channel;

a second gate assembly located outside said second sprue channel and coupled to an inlet of said second sprue channel; and

wherein said first gate assembly is movable to cover said outlet of said first sprue channel and said second gate assembly is ~~is~~ movable to cover said inlet of said second sprue channel to restrict the flow of melt from said first sprue channel and said second sprue channel when said second sprue bar element moves from the first position to the second position.

18. (Currently Amended) An injection molding apparatus comprising:

a first sprue bar element having a first sprue channel for receiving a melt stream of moldable material under pressure;

a second movable sprue bar element having a second sprue channel for selectively receiving said melt stream from said first sprue channel;

a first gate assembly located outside said first sprue channel and coupled to an outlet of said first sprue channel, said first gate assembly being slidingly movable from a first position wherein said first gate assembly does not obstruct said outlet to a second position wherein said first gate assembly obstructs said outlet;

a second gate assembly located outside said second sprue channel and coupled to an inlet of said second sprue channel, said second gate assembly being slidingly movable from a first position wherein said second gate assembly does not obstruct said inlet to a second position wherein said gate assembly obstructs said inlet; and

wherein said first gate assembly and said second gate assembly cooperate by movement between said respective first and second positions to control the flow of melt from said first sprue channel and said second sprue channel.

19. (Original) An injection molding apparatus according to claim 18, wherein said second position of said first gate assembly and said second position of said second gate assembly inhibit the flow of melt from said first sprue channel and said second sprue channel.

20. (Currently Amended) An injection molding apparatus comprising:

a first sprue bar element having a first sprue channel for receiving a melt stream of moldable material under pressure;

a second movable sprue bar element having a second sprue channel for selectively receiving said melt stream from said first sprue channel, said second movable sprue bar element being movable between a melt delivery position and a melt interrupted position;

a first gate assembly located outside said first sprue channel and coupled to an outlet of said first sprue channel, said first gate assembly being movable relative to said outlet of said first sprue channel from a first position to a second position;

a second gate assembly located outside said second sprue channel and coupled to an inlet of said second sprue channel, said second gate assembly being movable relative to said inlet of said second sprue channel from a first position to a second position; and

wherein said first gate assembly and said second gate assembly are movable from said respective first and second positions ~~actuated~~ by the movement of said second movable sprue bar element from said melt delivery position to said melt interrupted position.